

Successful P&A Intervention Using Hydraulic Workover Unit: 60m Section Milling with Mud Motor and TruEdge™ Inserts

The operation used a 8200 K-Mill with TruEdge inserts powered by a 6¾ inch OD mud motor to create a window behind the 9⅝ inch casing, allowing for effective reservoir isolation.



Challenging Section Milling Operation in the Mediterranean Sea

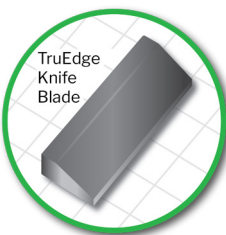
A leading Oil & Gas Operator in Spain encountered a complex offshore milling operation in the Mediterranean Sea. The objective was to isolate the well using a Wellbore Integrity Solutions' (WIS) 8200 K-Mill in conjunction with a 6¾ inch OD mud motor. The customer emphasized the need to optimize the Bottom Hole Assembly (BHA) design due to the rig's limitations in RPM, flow rate, and weight on the mill.

Integrated Technology Approach for Customized Solutions

Due to the well's location in a specially protected area for Mediterranean biodiversity, the workover operation necessitated the use of a Hydraulic Workover Unit (HWOU). An integrated technology approach was implemented to provide a tailored solution for the section milling operation. This process involved thorough planning and execution, including detailed risk analysis and precise operational planning. Consequently, the operation not only met but exceeded the customer's expectations.

A New Benchmark in Milling Operations

- The section milling assembly was driven by a mud motor and deployed via a HWOU, successfully completing the operation and surpassing customer expectations.
- The system incorporated Wellbore Integrity Solutions' (WIS) optimized milling insert, **TruEdge™** technology, which delivered enhanced rate of penetration (ROP), greater durability, and superior wear resistance.
- This optimized BHA created a 60-meter barrier, enabling rock-to-rock zonal isolation of the reservoir.



TruEdge™
The Science of Milling

Location: Mediterranean Sea, Spain

Rig: HWOU

Casing Size: 9⅝ inch (47 #), L80

Depth: 1900m to 1960m MD

CHALLENGE

A customer required a 60-meter (~197 ft) milled window in 9⅝ inch (47# L80) casing using a mud motor, with a well inclination of 58.2° and a measured depth (MD) of 1900 meters (6232 ft). The goal was to set a cement plug to create a permanent isolation barrier within the reservoir, necessitating a single combination barrier across the entire 60-meter window.

SOLUTION

Deploy a section mill equipped with proprietary WIS TruEdge inserts, driven by a 6¾ inch OD mud motor. This configuration enabled efficient milling of the 9⅝ inch casing, creating the required 60-meter window for the placement of a cement plug, effectively isolating the reservoir.

RESULTS

- Successful project execution that exceeded customer expectations delivering a 60m barrier interface.
- Multiple technologies functioned as intended.
- Successful runs of an 8200 K-Mill with a 6¾ inch mud motor via a HWOU.

